

## CLAIMS:

1. An image conversion unit (100,200,300,400,500,600) for converting a first image with a first resolution into a second image with a second resolution being higher than the first resolution, the image conversion unit (100,200,300,400,500,600) comprising:
  - a coefficient-determining means (108) for determining a first filter
  - 5 coefficient on basis of pixel values of the first image; and
  - an adaptive filtering means (106) for computing a second pixel value of the second image on basis of a first one of the pixel values of the first image and the first filter coefficient,characterized in that the image conversion unit (100,200,300,400,500,600) further comprises  
10 a low-pass filter (104) for filtering the second image.
2. An image conversion unit (200,300,400,500,600) as claimed in claim 1, characterized in that the image conversion unit (100,200,300,400,500,600) comprises a feature extraction unit (202) for extracting features from the first image or the second image  
15 and that the feature extraction unit (202) is arranged to control the low-pass filter (104).
3. An image conversion unit (200,300,400,500,600) as claimed in claim 2, characterized in that the feature extraction unit (202) is an edge detector unit for detecting edges in the first image.  
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4. An image conversion unit (200,300,400,500,600) as claimed in claim 2, characterized in that the feature extraction unit (202) is a motion detector unit for computing a value representing the amount of motion in the first image, relative to a third image of a series of images to which both the first image and the third image belong.  
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5. An image conversion unit (200,300,400,500,600) as claimed in claim 2, characterized in that the feature extraction unit (202) is a motion estimation unit for computing motion vectors for respective groups of pixels of the first image, relative to further

groups of pixels of a third image of a series of images to which both the first image and the third image belong.

6. An image conversion unit (100,200,300,400,500,600) as claimed in claim 1,  
5 characterized in that the low-pass filter (104) is a temporal filter.

7. An image conversion unit (400,500) as claimed in claim 6, characterized in  
that the low-pass filter (104) is a temporal recursive filter comprising a motion compensation  
unit (402) for motion compensation of a previously filtered image.

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8. An image conversion unit (500,600) as claimed in claim 6, characterized in  
being arranged to selectively provide components in a predetermined spatial frequency range  
of the second image, to the temporal filter, the predetermined frequency range corresponding  
to frequencies which are above the Nyquist frequency of the first image.

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9. An image conversion unit (500) as claimed in claim 8, characterized in  
comprising a band-split unit connected to the adaptive filtering means and being arranged to  
provide the components to the temporal filter.

20 10. An image conversion unit (100,200) as claimed in claim 3, characterized in  
that the low-pass filter (104) is an edge-adaptive spatial low-pass filter.

11. An image processing apparatus (700), comprising:  
- receiving means for receiving a signal corresponding to a first image; and  
25 - an image conversion unit (100,200,300,400,500,600) for converting the first  
image into a second image, the image conversion unit (100,200,300,400,500,600) as claimed  
in claim 1.

12. An image processing apparatus (700) as claimed in claim 11, characterized in  
30 further comprising a display device (706) for displaying the low-pass filtered second image.

13. An image processing apparatus (700) as claimed in claim 11, characterized in  
that it is a TV.

14.           A method of converting a first image with a first resolution into a second image with a second resolution being higher than the first resolution, the method comprising:
- determining a first filter coefficient on basis of pixel values of the first image; and
- 5               - computing a second pixel value of the second image on basis of a first one of the pixel values of the first image and the first filter coefficient, characterized in comprising low-pass filtering of the second image.
15.           A computer program product to be loaded by a computer arrangement,
- 10 comprising instructions to convert a first image with a first resolution into a second image with a second resolution being higher than the first resolution, the computer arrangement comprising processing means and a memory, the computer program product, after being loaded, providing said processing means with the capability to carry out:
- determining a first filter coefficient on basis of pixel values of the first
- 15 image;
- computing a second pixel value of the second image on basis of a first one of the pixel values of the first image and the first filter coefficient; and
  - low-pass filtering of the second image.